August 31, 2016 Service Request No:R1608295

Ms. Ancy Sebastian
ALS Environmental - Canada
5420 Mainway Drive, Unit #5
Burlington, ON L7L 6A4

Laboratory Results for: Picatinny Arsenal

Dear Ms.Sebastian,

Enclosed are the results of the sample(s) submitted to our laboratory August 04, 2016
For your reference, these analyses have been assigned our service request number **R1608295.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Water

Service Request:R1608295
Date Received:8/4/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV, validation deliverables including all summary forms and associated raw data. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

20 / Water, Soil samples were received for analysis at ALS Environmental on 08/04/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Metals Analyses:

Method 6010C: The matrix spike for Arsenic was diluted out due to matrix.

Method 6010C, R1608295: The Method Reporting Limit (MRL) was elevated due to dilutions needed for high concentration in Metals of interest causing interferences with other metals.

General Chemistry Analyses:

No significant anomalies were noted with this analysis.

Approved by _____ Date 8/31/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: PY-4011 Scrubber purge water	Lab ID: R1608295-001					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Solids, Total	2020			59	mg/L	SM 2540 B-
Solids, Total Dissolved (TDS)	1760		21	59	mg/L	SM 2540 C-
Solids, Total Suspended (TSS)	38.6			1.1	mg/L	SM 2540 D-

CLIENT ID: PY-4012 Scrubber purge water	Lab ID: R1608295-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Lead, Total	2240		5	50	ug/L	6010C

CLIENT ID: PY-4014 Ash/Metals Spiking Solution	Lab ID: R1608295-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Chromium, Total	3620000		300	10000	ug/L	6010C
Lead, Total	32700000		50000	500000	ug/L	6010C

CLIENT ID: PY-5019 Scrubber purge water	Lab ID: R1608295-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Solids, Total	2190			50	mg/L	SM 2540 B-
Solids, Total Dissolved (TDS)	1880		18	50	mg/L	SM 2540 C-
Solids, Total Suspended (TSS)	11.2			1.2	mg/L	SM 2540 D-

CLIENT ID: PY-5020 Scrubber purge water	Lab ID: R1608295-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Solids, Total	2070			50	mg/L	SM 2540 B-
Solids, Total Dissolved (TDS)	1980		18	50	mg/L	SM 2540 C-
Solids, Total Suspended (TSS)	5.8			1.2	mg/L	SM 2540 D-

CLIENT ID: PY-5021 Scrubber purge water	Lab ID: R1608295-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Chromium, Total	81		0.3	10	ug/L	6010C
Lead, Total	3830		5	50	ug/L	6010C

CLIENT ID: PY-5022 Ash/Metals Spiking Solution	Lab ID: R1608295-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Chromium, Total	3950000		300	10000	ug/L	6010C
Lead, Total	31000000		50000	500000	ug/L	6010C

CLIENT ID: PY-5023 Ash/Metals Spiking Solution	Lab ID: R1608295-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Chromium, Total	3970000		300	10000	ug/L	6010C
Lead, Total	30800000		50000	500000	ug/L	6010C

CLIENT ID: PY-6006 Baghouse Ash	Lab ID: R1608295-014					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Cadmium, Total	0.53		0.04	0.50	mg/Kg	6010C
Chromium, Total	7410		7	50	mg/Kg	6010C
Lead, Total	203000		200	2500	mg/Kg	6010C

SAMPLE DETECTION SUMMARY

CLIENT ID: PY-6006B Kiln Ash	Lab ID: R1608295-015					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Total Solids	100				Percent	ALS SOP
Cadmium, Total	1.23		0.04	0.50	mg/Kg	6010C
Chromium, Total	10900		7	50	mg/Kg	6010C
Lead, Total	43200		30	500	mg/Kg	6010C

CLIENT ID: PY-6006C Quench Ash	Lab ID: R1608295-016					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Total Solids	50.8				Percent	ALS SOP
Chromium, Total	555		0.3	1.9	mg/Kg	6010C
Lead, Total	2290		3	48	mg/Kg	6010C

CLIENT ID: PY-6011 Scrubber purge water	Lab ID: R1608295-017					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Solids, Total	1940			40	mg/L	SM 2540 B-
Solids, Total Dissolved (TDS)	1780		15	40	mg/L	SM 2540 C-
Solids, Total Suspended (TSS)	17.6			1.1	mg/L	SM 2540 D-

CLIENT ID: PY-6012 Scrubber purge water	Lab ID: R1608295-018					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Chromium, Total	80		0.3	10	ug/L	6010C
Lead, Total	1090		5	50	ug/L	6010C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: ALS Environmental - Canada **Service Request:**R1608295
Project: Picatinny Arsenal

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1608295-001	PY-4011 Scrubber purge water	8/1/2016	1555
R1608295-002	PY-4012 Scrubber purge water	8/1/2016	1555
R1608295-003	PY-4013 Caustic Feed	8/1/2016	1435
R1608295-004	PY-4014 Ash/Metals Spiking Solution	8/1/2016	1625
R1608295-005	PY-4054 1,2-DCB POHC Spike Solution	8/1/2016	1630
R1608295-006	PY-4055 TCE POHC Spike Solution	8/1/2016	1630
R1608295-007	PY-5019 Scrubber purge water	8/2/2016	1255
R1608295-008	PY-5020 Scrubber purge water	8/2/2016	1255
R1608295-009	PY-5021 Scrubber purge water	8/2/2016	1255
R1608295-010	PY-5022 Ash/Metals Spiking Solution	8/2/2016	1450
R1608295-011	PY-5023 Ash/Metals Spiking Solution	8/2/2016	1450
R1608295-012	PY-5068 1,2-DCB POHC Spike Solution	8/2/2016	1455
R1608295-013	PY-5069 TCE POHC Spike Solution	8/2/2016	1455
R1608295-014	PY-6006 Baghouse Ash	8/3/2016	1530
R1608295-015	PY-6006B Kiln Ash	8/3/2016	1600
R1608295-016	PY-6006C Quench Ash	8/3/2016	1630
R1608295-017	PY-6011 Scrubber purge water	8/3/2016	1345
R1608295-018	PY-6012 Scrubber purge water	8/3/2016	1345
R1608295-019	PY-6032 1,2-DCB POHC Spike Solution	8/3/2016	1450
R1608295-020	PY-6033 TCE POHC Spike Solution	8/3/2016	1455

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD

REFERENCE COC NO.: T2-001-NY

PAGE 1 OF 2

Bill To: CBI Federal Services
Accounts Payable

Project Name/No: Picatinny Arsenal
Sample Team Member: J. McGee, G. Britt, D. Jarvis, G. Ward
Project Manager: Berani Halley
Purchase Order No.:
Required Report Date: **Normal**

Sample Shipment Date: **8/03/2016**
Laboratory Destination: ALS-NY
Laboratory Contact: Ancy Sebastian
Project Contact/Phone: Joyce McGee 865-850-7306
Carrier Waybill No.: **Lab Courier**

Report To: CBI Federal Services
Joyce McGee
2410 Cherahala Drive
Knoxville, TN 37932

Sample Number	Analytical QC	Sample Type/ Description	Date/Time Collected	Container Type	Pre-servative	Requested Testing Program	Sample Notes / Expectations	Disposal Record
PY-4011		Scrubber purge water	8/01/2016 1555	1-L Amber Boston Round	Cool, 4C	TDS, TSS, TS		
PY-4012		Scrubber purge water	8/01/2016 1555	1L poly w HNO3	Cool, 4C, HNO3	Metals and Hg		
PY-4013		Caustic feed	8/01/2016 1435	250-mL Amber Boston Round	Cool, 4C	**ARCHIVE**	Handle with Care - Caustic materials	
PY-4014		Ash/Metals Spiking Solution	8/01/2016 1625	250-mL Amber Boston Round	Cool, 4C	Metals and Hg	Use caution contains Lead.	
PY-4054		1,2-DCB POHC Spike Solution	8/01/2016 1630	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		
PY-4055		TCE POHC Spike Solution	8/01/2016 1630	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		

Special Instructions: Report MS/MSDs as "Sample Number-MS" and "Sample Number-MSD". For Example: PY-5021-MS and PY-5021-MSD.

Possible Hazard Identification:
Non-haz: ____ Flammable: x Poison B: ____ Unknown: **X**

Sample Disposal:
Return to Client: ____ Disposal by Lab: **X** Archive: ____

Turnaround Time:
Normal: **X** Rush: ____

Level of QC Required:
I. ____ II. ____ III. ____ Project Specific: **X** (talk to A. Sebastian)

1. Relinquished by: J. McGee, CB&I Federal Services — Date: 8/3/16 — Time: 1900
1. Received by: Greg Boydell — Date: 03/Aug/16 — Time: 19:00
2. Relinquished by: — Date: — Time:
2. Received by: — Date: 8/4/16 — Time: 1630

Comments: **If samples not received in good condition contact Joyce McGee (865)-850-7306 immediately.**

R1608295 5
ALS Environmental - Canada
Picatinny Arsenal

Reference COC Number: **T2-001-NY**

ANALYSIS REQUEST AND CHAIN-OF-CUSTODY RECORD (Cont.)

Project Name/No.: Picatinny Arsenal

Laboratory Destination: ALS-NY

Sample Number	Analy QC	Sample Type/ Description	Date/Time Collected	Container Type	Pre-servative	Requested Testing Program	Sample Notes / Expectations	Disposal Record
PY-5019		Scrubber purge water	8/02/2016 11255	1-L Amber Boston Round	Cool, 4C	TDS, TSS, TS		
PY-5020		Scrubber purge water	8/02/2016 11255	1-L Amber Boston Round	Cool, 4C	TDS, TSS, TS		
PY-5021	MS/MSD	Scrubber purge water	8/02/2016 11255	1 L Poly w HNO3	Cool, 4C	Metals and Hg		
PY-5022		Ash/Metals Spiking Solution	08/02/2016 1450	250-mL Amber Boston Round	Cool, 4C	Metals and Hg	Use caution contains Lead.	
PY-5023		Ash/Metals Spiking Solution	08/02/2016 1450	250-mL Amber Boston Round	Cool, 4C	Metals and Hg	Use caution contains Lead.	
PY-5068		1,2-DCB POHC Spike Solution	08/02/2016 1455	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		
PY-5069		TCE POHC Spike Solution	08/02/2016 1455	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		
PY-6006	MS/MSD	Baghouse Ash	08/03/2016 1530	250 mL WM jar	Cool, 4C	Metals and Hg		
PY-6006B	MS/MSD	Kiln Ash	08/03/2016 1600	250 mL WM jar	Cool, 4C	Metals and Hg		
PY-6006C	MS/MSD	Quench Ash	08/03/2016 1630	250 mL WM jar	Cool, 4C	Metals and Hg		
PY-6011		Scrubber purge water	08/03/2016 1345	1-L Amber Boston Round	Cool, 4C	TDS, TSS, TS		
PY-6012		Scrubber purge water	08/03/2016 1345	1L Poly 2 HNO3	Cool, 4C, HNO3	Metals and Hg		
PY-6032		1,2-DCB POHC Spike Solution	08/03/2016 1450	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		
PY-6033		TCE POHC Spike Solution	08/03/2016 1455	40-ml VOA vials, NO PRESERVATIVE	Cool, 4C	**ARCHIVE**		

ALS

Cooler Receipt and Preservation Check Form

Project/Client ALS Folder Number ________.

Cooler received on 8/4/16 by: TS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N
2	**Custody papers** properly completed (ink, signed)?	Y N
3	Did all bottles arrive in good **condition** (unbroken)?	Y N
4	Circle: **Wet Ice** **Dry Ice** **Gel packs** present?	Y N

5a	**Perchlorate** samples have required headspace?	Y N NA
5b	Did VOA vials, Alk, or Sulfide have sig* **bubbles**?	Y N NA
6	Where did the bottles originate? ALS/ROC CLIENT	
7	Soil VOA received as: Bulk Encore 5035set NA	

8. Temperature Readings Date: 8/4/16 Time: 1445 ID: IR#5 IR#6 From: Temp Blank Sample Bottle

Observed Temp (°C)	8.3	2.5	4.9	3.4			
Correction Factor (°C)	-.5	0	0	0			
Corrected Temp (°C)	7.8	2.5	4.9	3.9			
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: ________ Ice melted Poorly Packed Same Day Rule
&Client Approval to Run Samples: ________ Standing Approval Client aware at drop-off Client notified by: ________

All samples held in storage location: R-002 by TS on 8/4/16 at 1445
5035 samples placed in storage location: ________ by ________ on ________ at ________

Cooler Breakdown: Date: 8/8/16 Time: 1200 by: TS

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3		X			001, 004, 011	1ml	13B 261 5266	<2
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: ________

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: Client bottles
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: [signature] 8/9/16

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: ALS Environmental - Canada **Service Request:** R1608295
Project: Picatinny Arsenal

Sample Name: PY-4011 Scrubber purge water **Date Collected:** 08/1/16
Lab Code: R1608295-001 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 2540 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KWONG
SM 2540 D-1997(2011)		KWONG

Sample Name: PY-4012 Scrubber purge water **Date Collected:** 08/1/16
Lab Code: R1608295-002 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

Sample Name: PY-4014 Ash/Metals Spiking Solution **Date Collected:** 08/1/16
Lab Code: R1608295-004 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

Sample Name: PY-5019 Scrubber purge water **Date Collected:** 08/2/16
Lab Code: R1608295-007 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 2540 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KWONG
SM 2540 D-1997(2011)		KWONG

Client: ALS Environmental - Canada **Service Request:** R1608295
Project: Picatinny Arsenal

Sample Name: PY-5020 Scrubber purge water **Date Collected:** 08/2/16
Lab Code: R1608295-008 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 2540 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KWONG
SM 2540 D-1997(2011)		KWONG

Sample Name: PY-5021 Scrubber purge water **Date Collected:** 08/2/16
Lab Code: R1608295-009 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

Sample Name: PY-5022 Ash/Metals Spiking Solution **Date Collected:** 08/2/16
Lab Code: R1608295-010 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

Sample Name: PY-5023 Ash/Metals Spiking Solution **Date Collected:** 08/2/16
Lab Code: R1608295-011 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

Client: ALS Environmental - Canada **Service Request:** R1608295
Project: Picatinny Arsenal

Sample Name: PY-6006 Baghouse Ash **Date Collected:** 08/3/16
Lab Code: R1608295-014 **Date Received:** 08/4/16
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	DBOND
6010C	CGILDAY	ADOCKHAM
7471B	CGILDAY	CGILDAY

Sample Name: PY-6006B Kiln Ash **Date Collected:** 08/3/16
Lab Code: R1608295-015 **Date Received:** 08/4/16
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	DBOND
6010C	CGILDAY	ADOCKHAM
7471B	CGILDAY	CGILDAY
ALS SOP		MLAMBRECHT

Sample Name: PY-6006C Quench Ash **Date Collected:** 08/3/16
Lab Code: R1608295-016 **Date Received:** 08/4/16
Sample Matrix: Soil

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7471B	CGILDAY	CGILDAY
ALS SOP		MLAMBRECHT

Sample Name: PY-6011 Scrubber purge water **Date Collected:** 08/3/16
Lab Code: R1608295-017 **Date Received:** 08/4/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
SM 2540 B-1997(2011)		KWONG
SM 2540 C-1997(2011)		KWONG

Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Service Request: R1608295

Sample Name: PY-6011 Scrubber purge water
Lab Code: R1608295-017
Sample Matrix: Water
Date Collected: 08/3/16
Date Received: 08/4/16

Analysis Method	Extracted/Digested By	Analyzed By
SM 2540 D-1997(2011)		KWONG

Sample Name: PY-6012 Scrubber purge water
Lab Code: R1608295-018
Sample Matrix: Water
Date Collected: 08/3/16
Date Received: 08/4/16

Analysis Method	Extracted/Digested By	Analyzed By
6010C	CGILDAY	ADOCKHAM
6010C	CGILDAY	DBOND
7470A	CGILDAY	CGILDAY

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

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Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/01/16 15:55
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-4012 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-002		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	1	08/12/16 19:24	08/11/16	
Beryllium, Total	6010C	3.0	U	ug/L	3.0	1	08/12/16 19:24	08/11/16	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	1	08/12/16 19:24	08/11/16	
Chromium, Total	6010C	10	U	ug/L	10	1	08/12/16 19:24	08/11/16	
Lead, Total	6010C	**2240**		ug/L	50	1	08/16/16 08:21	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:41	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/01/16 16:25
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-4014 Ash/Metals Spiking Solution	**Basis:**	NA
Lab Code:	R1608295-004		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	1000	U	ug/L	1000	100	08/12/16 19:28	08/11/16	
Beryllium, Total	6010C	300	U	ug/L	300	100	08/12/16 19:28	08/11/16	
Cadmium, Total	6010C	500	U	ug/L	500	100	08/12/16 19:28	08/11/16	
Chromium, Total	6010C	**3620000**		ug/L	10000	1000	08/15/16 11:09	08/11/16	
Lead, Total	6010C	**32700000**		ug/L	500000	200	08/16/16 09:07	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:42	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/02/16 12:55
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-5021 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-009		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	1	08/12/16 19:31	08/11/16	
Beryllium, Total	6010C	3.0	U	ug/L	3.0	1	08/12/16 19:31	08/11/16	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	1	08/12/16 19:31	08/11/16	
Chromium, Total	6010C	**81**		ug/L	10	1	08/12/16 19:31	08/11/16	
Lead, Total	6010C	**3830**		ug/L	50	1	08/16/16 08:29	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:44	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/02/16 14:50
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-5022 Ash/Metals Spiking Solution	**Basis:**	NA
Lab Code:	R1608295-010		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	1000	U	ug/L	1000	100	08/12/16 19:58	08/11/16	
Beryllium, Total	6010C	300	U	ug/L	300	100	08/12/16 19:58	08/11/16	
Cadmium, Total	6010C	500	U	ug/L	500	100	08/12/16 19:58	08/11/16	
Chromium, Total	6010C	**3950000**		ug/L	10000	1000	08/15/16 11:13	08/11/16	
Lead, Total	6010C	**31000000**		ug/L	500000	200	08/16/16 08:48	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:49	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/02/16 14:50
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-5023 Ash/Metals Spiking Solution	**Basis:**	NA
Lab Code:	R1608295-011		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	1000	U	ug/L	1000	100	08/12/16 20:02	08/11/16	
Beryllium, Total	6010C	300	U	ug/L	300	100	08/12/16 20:02	08/11/16	
Cadmium, Total	6010C	500	U	ug/L	500	100	08/12/16 20:02	08/11/16	
Chromium, Total	6010C	**3970000**		ug/L	10000	1000	08/15/16 11:17	08/11/16	
Lead, Total	6010C	**30800000**		ug/L	500000	200	08/16/16 08:52	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:50	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 15:30
Sample Matrix:	Soil	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6006 Baghouse Ash	**Basis:**	As Received
Lab Code:	R1608295-014		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	50	U	mg/Kg	50	50	08/14/16 10:31	08/11/16	
Beryllium, Total	6010C	0.90	U	mg/Kg	0.90	3	08/15/16 13:04	08/11/16	
Cadmium, Total	6010C	**0.53**		mg/Kg	0.50	1	08/12/16 16:45	08/11/16	
Chromium, Total	6010C	**7410**		mg/Kg	50	50	08/14/16 10:31	08/11/16	
Lead, Total	6010C	**203000**		mg/Kg	2500	500	08/15/16 11:43	08/11/16	
Mercury, Total	7471B	0.033	U	mg/Kg	0.033	1	08/12/16 12:30	08/12/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 16:00
Sample Matrix:	Soil	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6006B Kiln Ash	**Basis:**	Dry
Lab Code:	R1608295-015		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	50	U	mg/Kg	50	50	08/14/16 10:51	08/11/16	
Beryllium, Total	6010C	0.89	U	mg/Kg	0.89	3	08/15/16 13:24	08/11/16	
Cadmium, Total	6010C	**1.23**		mg/Kg	0.50	1	08/12/16 17:16	08/11/16	
Chromium, Total	6010C	**10900**		mg/Kg	50	50	08/14/16 10:51	08/11/16	
Lead, Total	6010C	**43200**		mg/Kg	500	100	08/15/16 12:03	08/11/16	
Mercury, Total	7471B	0.030	U	mg/Kg	0.030	1	08/12/16 12:35	08/12/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 16:30
Sample Matrix:	Soil	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6006C Quench Ash	**Basis:**	Dry
Lab Code:	R1608295-016		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	1.9	U	mg/Kg	1.9	1	08/12/16 18:00	08/11/16	
Beryllium, Total	6010C	0.58	U	mg/Kg	0.58	1	08/12/16 18:00	08/11/16	
Cadmium, Total	6010C	0.96	U	mg/Kg	0.96	1	08/12/16 18:00	08/11/16	
Chromium, Total	6010C	**555**		mg/Kg	1.9	1	08/12/16 18:00	08/11/16	
Lead, Total	6010C	**2290**		mg/Kg	48	5	08/14/16 11:18	08/11/16	
Mercury, Total	7471B	0.063	U	mg/Kg	0.063	1	08/12/16 12:43	08/12/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 13:45
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6012 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-018		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	1	08/12/16 20:06	08/11/16	
Beryllium, Total	6010C	3.0	U	ug/L	3.0	1	08/12/16 20:06	08/11/16	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	1	08/12/16 20:06	08/11/16	
Chromium, Total	6010C	**80**		ug/L	10	1	08/12/16 20:06	08/11/16	
Lead, Total	6010C	**1090**		ug/L	50	1	08/16/16 08:56	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:55	08/15/16	

Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/01/16 15:55
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-4011 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Solids, Total	SM 2540 B-1997(2011)	**2020**	mg/L	59	1	08/08/16 09:45	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**1760**	mg/L	59	1	08/08/16 14:25	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**38.6**	mg/L	1.1	1	08/08/16 16:30	

Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/02/16 12:55
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-5019 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-007		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Solids, Total	SM 2540 B-1997(2011)	**2190**	mg/L	50	1	08/08/16 09:45	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**1880**	mg/L	50	1	08/08/16 14:25	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**11.2**	mg/L	1.2	1	08/08/16 16:30	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/02/16 12:55
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-5020 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-008		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Solids, Total	SM 2540 B-1997(2011)	**2070**	mg/L	50	1	08/08/16 09:45	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**1980**	mg/L	50	1	08/08/16 14:25	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**5.8**	mg/L	1.2	1	08/08/16 16:30	

Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 16:00
Sample Matrix:	Soil	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6006B Kiln Ash	**Basis:**	As Received
Lab Code:	R1608295-015		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	**100**	Percent	-	1	08/15/16 09:13	

Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 16:30
Sample Matrix:	Soil	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6006C Quench Ash	**Basis:**	As Received
Lab Code:	R1608295-016		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Total Solids	ALS SOP	**50.8**	Percent	-	1	08/15/16 09:13	

Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	08/03/16 13:45
Sample Matrix:	Water	**Date Received:**	08/04/16 16:30
Sample Name:	PY-6011 Scrubber purge water	**Basis:**	NA
Lab Code:	R1608295-017		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Solids, Total	SM 2540 B-1997(2011)	**1940**	mg/L	40	1	08/08/16 09:45	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	**1780**	mg/L	40	1	08/08/16 14:25	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	**17.6**	mg/L	1.1	1	08/08/16 16:30	

QC Summary Forms

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Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1608295-MB1		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	10	U	ug/L	10	1	08/12/16 19:08	08/11/16	
Beryllium, Total	6010C	3.0	U	ug/L	3.0	1	08/12/16 19:08	08/11/16	
Cadmium, Total	6010C	5.0	U	ug/L	5.0	1	08/12/16 19:08	08/11/16	
Chromium, Total	6010C	10	U	ug/L	10	1	08/12/16 19:08	08/11/16	
Lead, Total	6010C	50	U	ug/L	50	1	08/16/16 08:06	08/15/16	
Mercury, Total	7470A	0.20	U	ug/L	0.20	1	08/15/16 12:37	08/15/16	

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	R1608295-MB2		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic, Total	6010C	1.0	U	mg/Kg	1.0	1	08/12/16 16:21	08/11/16	
Beryllium, Total	6010C	0.30	U	mg/Kg	0.30	1	08/12/16 16:21	08/11/16	
Cadmium, Total	6010C	0.50	U	mg/Kg	0.50	1	08/12/16 16:21	08/11/16	
Chromium, Total	6010C	1.0	U	mg/Kg	1.0	1	08/12/16 16:21	08/11/16	
Lead, Total	6010C	5.0	U	mg/Kg	5.0	1	08/14/16 09:11	08/11/16	
Mercury, Total	7471B	0.033	U	mg/Kg	0.033	1	08/12/16 12:23	08/12/16	

Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Soil

Service Request: R1608295
Date Analyzed: 08/12/16 - 08/14/16

Lab Control Sample Summary
Inorganic Parameters

Units:mg/Kg
Basis: Dry

Lab Control Sample
R1608295-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	3.52	4.0	88	80-120
Beryllium, Total	6010C	4.68	5.00	94	80-120
Cadmium, Total	6010C	4.88	5.00	98	80-120
Chromium, Total	6010C	20.8	20.0	104	80-120
Lead, Total	6010C	49.9	50.0	100	80-120
Mercury, Total	7471B	0.142	0.167	85	80-120

Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Water

Service Request: R1608295
Date Analyzed: 08/12/16 - 08/16/16

Lab Control Sample Summary
Inorganic Parameters

Units:ug/L
Basis:NA

Lab Control Sample
R1608295-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	40.8	40	102	80-120
Beryllium, Total	6010C	48.9	50.0	98	80-120
Cadmium, Total	6010C	51.0	50.0	102	80-120
Chromium, Total	6010C	201	200	100	80-120
Lead, Total	6010C	522	500	104	80-120
Mercury, Total	7470A	0.944	1.00	94	80-120

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project	Picatinny Arsenal	**Date Collected:**	08/02/16
Sample Matrix:	Water	**Date Received:**	08/04/16
		Date Analyzed:	08/12/16 - 08/16/16

Replicate Sample Summary
Inorganic Parameters

Sample Name:	PY-5021 Scrubber purge water	**Units:**	ug/L
Lab Code:	R1608295-009	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R1608295-009DUP Result	Average	RPD	RPD Limit
Arsenic, Total	6010C	10	10 U	10 U	NC	NC	20
Beryllium, Total	6010C	3.0	3.0 U	3.0 U	NC	NC	20
Cadmium, Total	6010C	5.0	5.0 U	5.0 U	NC	NC	20
Chromium, Total	6010C	10	81	81	80.9	<1	20
Lead, Total	6010C	50	3830	3870	3850	1	20
Mercury, Total	7470A	0.20	0.20 U	0.20 U	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project	Picatinny Arsenal	**Date Collected:**	08/03/16
Sample Matrix:	Soil	**Date Received:**	08/04/16
		Date Analyzed:	08/12/16 - 08/15/16

Replicate Sample Summary
Inorganic Parameters

Sample Name:	PY-6006 Baghouse Ash	**Units:**	mg/Kg
Lab Code:	R1608295-014	**Basis:**	As Received

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R1608295-014DUP Result	Average	RPD	RPD Limit
Arsenic, Total	6010C	50	50 U	50 U	NC	NC	20
Beryllium, Total	6010C	0.90	0.90 U	0.90 U	NC	NC	20
Cadmium, Total	6010C	0.50	0.53	0.50 U	NC	NC	20
Chromium, Total	6010C	50	7410	7420	7410	<1	20
Lead, Total	6010C	2500	203000	189000	196000	7	20
Mercury, Total	7471B	0.032	0.032 U	0.032 U	NC	NC	35

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: ALS Environmental - Canada
Project Picatinny Arsenal
Sample Matrix: Soil

Service Request: R1608295
Date Collected: 08/03/16
Date Received: 08/04/16
Date Analyzed: 08/12/16 - 08/15/16

Replicate Sample Summary
Inorganic Parameters

Sample Name: PY-6006B Kiln Ash
Lab Code: R1608295-015

Units: mg/Kg
Basis: Dry

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R1608295-015DUP Result	Average	RPD	RPD Limit
Arsenic, Total	6010C	48	48 U	48 U	NC	NC	20
Beryllium, Total	6010C	0.86	0.86 U	0.86 U	NC	NC	20
Cadmium, Total	6010C	0.48	1.23	0.81	1.02	41 *	20
Chromium, Total	6010C	48	10900	10500	10700	3	20
Lead, Total	6010C	480	43200	36900	40100	16	20
Mercury, Total	7471B	0.031	0.031 U	0.031 U	NC	NC	35

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project	Picatinny Arsenal	**Date Collected:**	08/03/16
Sample Matrix:	Soil	**Date Received:**	08/04/16
		Date Analyzed:	08/12/16 - 08/14/16

Replicate Sample Summary
Inorganic Parameters

Sample Name:	PY-6006C Quench Ash	**Units:**	mg/Kg
Lab Code:	R1608295-016	**Basis:**	Dry

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R1608295-016DUP Result	Average	RPD	RPD Limit
Arsenic, Total	6010C	1.9	1.9 U	1.9 U	NC	NC	20
Beryllium, Total	6010C	0.58	0.58 U	0.58 U	NC	NC	20
Cadmium, Total	6010C	0.97	0.97 U	0.97 U	NC	NC	20
Chromium, Total	6010C	1.9	555	503	392	56 *	20
Lead, Total	6010C	49	2290	2150	2220	6	20
Mercury, Total	7471B	0.062	0.062 U	0.062 U	NC	NC	35

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Water

Service Request:R1608295
Date Collected:08/02/16
Date Received:08/04/16
Date Analyzed:08/12/16 - 08/16/16

Matrix Spike Summary
Inorganic Parameters

Sample Name: PY-5021 Scrubber purge water
Lab Code: R1608295-009

Units:ug/L
Basis:NA

Matrix Spike
R1608295-009MS

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	10 U	42	40	104	75-125
Beryllium, Total	6010C	3.0 U	48.8	50.0	98	75-125
Cadmium, Total	6010C	5.0 U	51.2	50.0	102	75-125
Chromium, Total	6010C	81	280	200	100	75-125
Mercury, Total	7470A	0.20 U	0.96	1.00	96	75-125
Lead, Total	6010C	3830	4480	500	132 #	75-125

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Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Soil

Service Request:R1608295
Date Collected:08/03/16
Date Received:08/04/16
Date Analyzed:08/12/16 - 08/15/16

Matrix Spike Summary
Inorganic Parameters

Sample Name: PY-6006 Baghouse Ash
Lab Code: R1608295-014

Units:mg/Kg
Basis: As Received

Matrix Spike
R1608295-014MS

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	50 U	17 J	4	412 *	75-125
Beryllium, Total	6010C	0.90 U	5.13	5.00	103	75-125
Cadmium, Total	6010C	0.53	5.29	5.00	95	75-125
Chromium, Total	6010C	7410	8110	20	3492 #	75-125
Mercury, Total	7471B	0.031 U	0.150	0.159	94	75-125
Lead, Total	6010C	203000	216000	50	24030 #	75-125

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Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Soil

Service Request:R1608295
Date Collected:08/03/16
Date Received:08/04/16
Date Analyzed:08/12/16 - 08/15/16

Matrix Spike Summary
Inorganic Parameters

Sample Name: PY-6006B Kiln Ash
Lab Code: R1608295-015

Units:mg/Kg
Basis: Dry

Matrix Spike
R1608295-015MS

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	50 U	16 J	4	400 *	75-125
Beryllium, Total	6010C	0.90 U	5.31	5.00	106	75-125
Cadmium, Total	6010C	1.23	5.05	5.00	76	75-125
Chromium, Total	6010C	10900	13100	20	11291 #	75-125
Mercury, Total	7471B	0.033 U	0.143	0.167	86	75-125
Lead, Total	6010C	43200	64600	50	42953 #	75-125

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Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Soil

Service Request:R1608295
Date Collected:08/03/16
Date Received:08/04/16
Date Analyzed:08/12/16 - 08/14/16

Matrix Spike Summary
Inorganic Parameters

Sample Name: PY-6006C Quench Ash
Lab Code: R1608295-016

Units:mg/Kg
Basis: Dry

Matrix Spike
R1608295-016MS

Analyte Name	Method	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	2.0 U	3.0	7.9	38 *	75-125
Beryllium, Total	6010C	0.59 U	9.55	9.84	97	75-125
Cadmium, Total	6010C	0.98 U	9.24	9.84	94	75-125
Chromium, Total	6010C	555	1350	39.4	2719 #	75-125
Mercury, Total	7471B	0.063 U	0.279	0.318	88	75-125
Lead, Total	6010C	2290	2940	98	656 #	75-125

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Analytical Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project:	Picatinny Arsenal	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	R1608295-MB		

Inorganic Parameters

Analyte Name	Analysis Method	Result		Units	MRL	Dil.	Date Analyzed	Q
Solids, Total	SM 2540 B-1997(2011)	10	U	mg/L	10	1	08/08/16 09:45	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	10	U	mg/L	10	1	08/08/16 14:25	
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	1.0	U	mg/L	1.0	1	08/08/16 16:30	

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QA/QC Report

Client:	ALS Environmental - Canada	**Service Request:**	R1608295
Project	Picatinny Arsenal	**Date Collected:**	08/01/16
Sample Matrix:	Water	**Date Received:**	08/04/16
		Date Analyzed:	08/08/16

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	PY-4011 Scrubber purge water	**Units:**	mg/L
Lab Code:	R1608295-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample R1608295-001DUP Result	Average	RPD	RPD Limit
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	59	1760	1760	1760	<1	10

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Client: ALS Environmental - Canada
Project: Picatinny Arsenal
Sample Matrix: Water

Service Request: R1608295
Date Analyzed: 08/08/16

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/L
Basis:NA

Lab Control Sample
R1608295-LCS

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Solids, Total	SM 2540 B-1997(2011)	302	300	101	90-110
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	898	914	98	90-110
Solids, Total Suspended (TSS)	SM 2540 D-1997(2011)	208	214	97	80-120